

REMARKS

Reconsideration of the application is respectfully requested. Claims 1-18 are pending in the application. The specification has been amended to correct a grammatical error. Claims 1, 12, and 16 have been amended to correct grammar and punctuation errors. No new matter has been added by way of the specification or claim amendments.

Claims 1-18 are pending and at issue.

Claim Objections

Claim 16 has been objected to as inadvertently omitting the term “one” from the claim. In response, claim 16 has been amended to correct this omission. Applicant respectfully requests that this objection be withdrawn, accordingly.

Rejections under 35 U.S.C. § 102(e)

Claims 1, 2, 4-6, 10-12, and 16 have been rejected under 35 U.S.C. § 102(e) as anticipated by International Publication No. WO 03/068999 (“Du Plessis”). The Examiner contends that Du Plessis discloses a method of heap leaching in which a gaseous suspension containing ultra-micro bacteria (UMB) that lack polysaccharide envelopes are introduced into the heap. The Examiner states that polysaccharide envelopes disclosed in Du Plessis are analogous to the exopolymers on the external cell walls of microbes. The Examiner concludes that Du Plessis also discloses the subject matter recited in claims 2, 4-6, 10, and 16-18 (*see* Office Action, page 3).

Applicant respectfully submits that the Examiner has incorrectly applied Du Plessis as a prior art reference against the instant application. The Du Plessis publication relied upon by the Examiner resulted from an international application that was filed on February 10, 2003, published in the English language, and designated the United States. The filing date of a foreign

patent application that has published as U.S. or WIPO application publications may not serve as a 35 U.S.C. § 102(e) date for prior art purposes. *See* MPEP § 706.02(f). Therefore, under the relevant rules, the earliest date on which Du Plessis can be effective as prior art under 35 U.S.C. § 102(e) is its international filing date, i.e., February 10, 2003. In short, Du Plessis is not effective as 102(e) prior art against the present application.

The present application is the U.S. national phase of International Application No. PCT/IB2003/004186 that was filed on September 15, 2003. Although this PCT filing date is after Du Plessis' earliest effective 102(e) date, the parent PCT application claimed the benefit of South African Application No. 2002/7439, that was filed on September 17, 2002.

Priority of the South African priority document was timely claimed and perfected in the present national phase application. Specifically, the claim for priority of the South African application was made on March 17, 2005 and was accompanied by a certified copy of the South African priority application (a copy of which is available on PAIR). As stated above, the South African priority application fully supports the presently claimed subject matter (*see, e.g.*, South Africa Application No. 2002/7439, pages 34-30). Therefore, Du Plessis should not be applied as prior art against the present application because the priority date to which the present application is entitled (i.e., September 17, 2002) pre-dates the Du Plessis 102(e) date (i.e., February 10, 2003) by approximately five months. The September 17, 2002 priority date of the present application was acknowledged by the U.S. Patent and Trademark Office on the "Notice of Acceptance of Application" that was mailed to Applicant on October 24, 2005 (a copy of which is also available on PAIR).

Because the present application has an effective priority date five months before Du Plessis' February 10, 2003 international filing date, Du Plessis is not prior art under 35 U.S.C. §102(e). Accordingly, applicant respectfully requests that this rejection be withdrawn.

Rejections under 35 U.S.C. § 103(a)

Claim 3 has been rejected under 35 U.S.C. § 103(a) as obvious over Du Plessis in view of Lappin-Scott, et al., *Applied and Environmental Microbiol.*, 54(6):1373-1382 (1988). According to the Examiner, Lappin-Scott discloses starving microorganisms by limiting carbon. The Examiner concludes that it would have been obvious to starve microorganisms using the methods disclosed in Lappin-Scott and use them in the Du Plessis method to arrive at the claimed invention.

For the reasons stated above, Du Plessis is not prior art to the present application. Lappin-Scott alone does not teach or suggest the claimed method for bio-assisted heap leaching. Therefore, this rejection should be withdrawn.

Even if Du Plessis were to be applied as prior art, the Examiner incorrectly interprets the cited references and improperly applies them against the claims. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. The prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2142. Finally, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, (Fed. Cir. 1983).

The present claims call for adding microbes to a bio-heap in an irrigation solution after starving the microbes to remove their exopolymer coating. Removing the exopolymer by starvation causes microbes to stick less to the rocks, and therefore, permits greater heap penetration.

Du Plessis identifies the use of irrigation to transport microbes into a heap as undesirable because this type of transport results in sub-optimal distribution of inoculum in the

heap, and non-uniform microbial distribution through the heap (*see* page 2, lines 10 to 14). Also, Du Plessis teaches that an increase in the concentration of nutrients required to revive such non-uniformly distributed microbes leads to an increase in the precipitation of nutrients, and that this is detrimental to the chemical and physical factors which are desirable to facilitate the leaching process (*see* page 2, lines 4-9). Therefore, Du Plessis as a whole teaches away from using irrigation as an answer to the problem of getting microbes deeper into a heap for bioleaching purposes. Lappin-Scott does not cure this deficiency. Therefore, even if Du Plessis were to be applied as prior art, it does not teach or suggest the claimed invention. Therefore, the rejection should be withdrawn even if Du Plessis were to be applied as prior art.

Claims 7-9 and 13-15 have been rejected as obvious over Du Plessis in view of U.S. Patent No. 6,435,769 ("Harrington"). The Examiner contends Harrington discloses a process for adding nutrients (such as carbonate) to rock heaps. The Examiner concludes that it would have been obvious to use the heap-leaching method of Du Plessis with Harrington's nutrient supplementation methods.

For the reasons stated above, Applicant submits that Du Plessis is not available as prior art against the present claims, and even if Du Plessis were to be applied as prior art, it does not render the claimed invention obvious because it teaches away from the claimed method, and Harrington does not cure this defect. Therefore, the rejection should be withdrawn.

CONCLUSION

In view of the above remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining that the Examiner believes can be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Dated: April 30, 2007

Respectfully submitted,

By 

S. Peter Ludwig

Registration No.: 25,351

DARBY & DARBY P.C.

P.O. Box 5257

New York, New York 10150-5257

(212) 527-7700

(212) 527-7701 (Fax)

Attorneys/Agents For Applicant